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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,123	05/25/2001	Bernhard Alphonso Ziegner	17539	1456

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EXAMINER

KOBERT, RUSSELL MARC

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/864,123

Applicant(s)

ZIEGNER ET AL.

Examiner

Russell M Kobert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-43 is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. In view of Applicants' remarks in the Response filed on January 27, 2003, the requirement to elect is hereby withdrawn.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Buffet et al (6477057).

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kosugi (5500556).

Kosugi anticipates a multilayer microwave or mm-wave circuit comprising: a first metallization layer (11<sub>m</sub>), at least a portion of said first metallization layer adapted for operation at a frequency ranging from 20 GHz to 100 GHz; a second metallization layer (12<sub>m2</sub>), at least a portion of said second metallization layer adapted for operation as a ground plane; a dielectric substrate layer (flexible organic material), said dielectric substrate layer disposed between said first and second metallization layers; and a

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plurality of conductive vias ( $5_m$ ,  $6_m$ ) extending through said dielectric substrate layer and electrically connecting portions of said first and second metallization layers, said multilayer microwave or mm-wave circuit being a flexible circuit (col 3, ln 13-36); as recited in claim 1.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosugi (5500556).

Kosugi shows a multilayer microwave or mm-wave circuit comprising: a first metallized polymer layer ( $11_m$ ) comprising (a) a first polymer layer having a thickness of

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less than 50 microns and (b) a first metallization layer ( $12_{m1}$ ) disposed on said first polymer layer, at least a portion of said first metallization layer being adapted for operation at a frequency ranging from 20 GHz to 100 GHz; a second metallized polymer layer ( $12_{m2}$ ) comprising (a) a second polymer layer having a thickness of less than 50 microns and (b) a second metallization layer disposed on said second polymer layer, at least a portion of said second metallization layer being adapted for operation as a ground plane; a dielectric substrate layer (flexible organic material) disposed between said first metallized polymer layer and said second metallized polymer layer; and a plurality of conductive vias ( $5_m$ ,  $6_m$ ) extending through said dielectric substrate layer and electrically connecting portions of said first and second metallization layers, said multilayer microwave or mm-wave circuit being a flexible circuit; (col 3, ln 13-36); as described in claim 5.

As to claim 10, further comprising circuit components (1, 4) disposed on said first metallization layer, said circuit components selected from discrete semiconductor components and integrated circuit chips is shown.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have further limited the invention as described in claims 2-7, 13, 17, 19 and 22 because these claims demonstrate limiting conditions which can be determined by routine experimentation and are considered to be within the scope of the invention as disclosed in Kosugi. Moreover, the limitations of claims 8-12, 14-16, 18, 20 and 21 are considered inherent in the apparatus of Kosugi or are within the normal range of operating the apparatus of Kosugi.

8. The following is a statement of reasons for the indication of allowable subject matter:

Claims 23-43 are allowable because:

A microwave or mm-wave sensor comprising: an antenna section comprising a first metallized polymer film layer; a circuit section comprising (a) circuit components and (b) a second metallized polymer film layer, which further comprises metallization adapted for operation at frequencies ranging from 20 GHz to 100 GHz; a signal processing and control section comprising (a) signal processing and control components and (b) a third metallized polymer film layer, which further comprises metallization adapted for said signal processing and control components; a fourth metallized polymer film layer comprising grounding metallization, portions of said second and fourth metallized polymer film layers being interconnected with one another by a plurality of conductive vias; a fifth metallized polymer film layer comprising grounding metallization, portions of said third and fifth metallized polymer film layers being interconnected with one another by a plurality of conductive vias; and a plurality of dielectric layers disposed between said first, second, third, fourth and fifth metallized polymer film layers, said microwave or mm-wave sensor being a flexible sensor; as recited in claim 23 has not been found.

A microwave or millimeter wave sensor comprising: an antenna section comprising a first metallized polymer layer, said first metallized polymer layer further comprising (i) a first polymer layer having a thickness of less than 50 microns and (ii) a

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first metallization layer disposed on said first polymer layer, at least a portion of said first metallization layer comprising a patch antenna array; a microwave or millimeter wave circuit section over said antenna section, said microwave or millimeter wave circuit section comprising (a) circuit components and (b) a second metallized polymer layer, said second metallized polymer layer further comprising (i) a second polymer layer having a thickness of less than 50 microns and (ii) a second metallization layer disposed on said second polymer layer, at least a portion of said second metallization layer adapted for operation at a frequency ranging from 20 GHz to 100 GHz; a signal processing and control section over said circuit section, said signal processing and control section comprising (a) signal processing and control circuit components and (b) a third metallized polymer layer which further comprises: (i) a third polymer layer having a thickness of less than 50 microns and (ii) a third metallization layer disposed on said third polymer layer adapted for said signal processing and control circuit components; a first ground-dielectric section between said antenna section and said circuit section, said first ground-dielectric section comprising: (a) a first dielectric layer, (b) a first ground layer over said first dielectric layer and (c) a second dielectric layer over said first ground layer; and a second ground-dielectric section between said circuit section and said signal processing and control section, said second ground-dielectric section comprising: (a) a third dielectric layer, (b) a second ground layer over said third dielectric layer and (c) a fourth dielectric layer over said second ground layer, said sensor being a flexible sensor; as recited in claim 30 has not been found.

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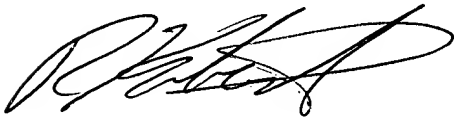
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

MacDonald, Jr. et al (5885710) shows a flexible strip transmission line.

10. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Russell M. Kobert  
Patent Examiner  
Group Art Unit 2829  
March 31, 2003



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